

GOMONOVA, A.I.; LGGGINOV, A.S.; SENATOROV, K.Ya.

Determining the lifetime of current carriers in the wide base of a  
four-layer semiconductor triode. Vest. Mosk. un. Ser. 3: Fiz., astron.  
18 no.6:43-47 N-D '63. (MIRA 17:2)

1. Kafedra teorii kolebaniy Moskovskogo universiteta.

ACCESSION NR: AP4014443

S/0188/64/000/001/0037/0042

AUTHOR: Gomonova, A. I.; Kochetkova, V. I.; Senatorov, K. Ya.

TITLE: Investigation and calculation of voltage converters based on controlled four-layer devices

SOURCE: Moscow. Universitet. Vestnik. Seriya 3. Fiz. astron., no. 1, 1964, 37-42

TOPIC TAGS: voltage converter, semiconductor, controlled semiconductor, four-layer semiconductor, transistor, square wave generator, generator efficiency

ABSTRACT: The operation of high-power, three-lead voltage converters of the four-layer semiconductor type shown in the Enclosure is described. Both the controlled and switching types were investigated with respect to their operation as a square wave generator, and the mathematical theory of such devices is discussed in detail. Results with an experimental model indicate that the operating frequency is in the low band (50-2000 cps) and that the maximum power at a load of 10 ohms is about 1.3 KW. The efficiency, plotted as a function of source voltage, reached 90% at 85 volts. It was determined that an average of 10 amps can be handled safely by the device mounted on massive copper heat sinks, with blowers to keep the temperature at 45-50C. Approximately 15 watts are dissipated from each device. Orig. art. has: 7 figures and 7 formulas.

Card 1/3

ACCESSION NR: AP4014443

ENCLOSURE: 01

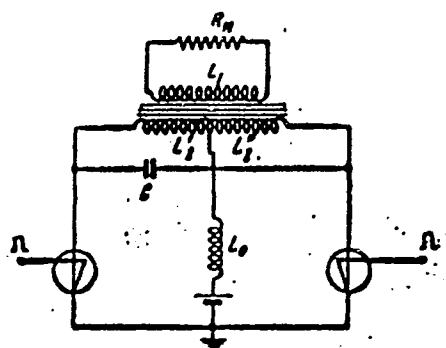


Fig. 1.

Card 3/3

L 11452-65

ACCESSION NR: AP4046675

S/0109/64/009/010/1757/1762

AUTHOR: Kaptsov, L. N.; Senatorov, K. Ya.

3

TITLE: Functioning of a sawtooth RC-oscillator with an inertial active 2-terminal network

SOURCE: Radiotekhnika i elektronika, v. 9, no. 10, 1964, 1757-1762

TOPIC TAGS: NPNP diode, sawtooth oscillator, relaxation oscillator

ABSTRACT: The results of investigations by T. Misawa (J. Electronics and Control, 1959, 7.6, 523) and A. N. Baker, et al. (IRE Wescon Convent. Rec., 1959, pt. 3, 3, 43) are used to explain the functioning of an RC sawtooth oscillator under  $R < |\rho|$  conditions, where  $\rho$  is the resistance of the negative-resistance element. The inertia of transients in NPNP devices used as a negative resistance and the series-connected spurious inductance are responsible for the oscillator's functioning. The processes transpiring in the oscillator are

Card 1/2

L 11452-65

ACCESSION NR: AP4046675

0

theoretically analyzed. Transients in the oscillator were also experimentally studied (oscillograms presented). The resistances ratio was brought up to  $R = 0.003p$ . The transient process was found to consist of (a) an avalanche-type turn-on of the NPNP diode; (b) a self-sustained oscillation in the diode-including circuit; (c) an incomplete turning-off of the diode which opens the oscillatory circuit; (d) a recombination of the carriers in the diode bases resulting in its complete turn-off. Orig. art. has: 5 figures, 12 formulas, and 1 table.

ASSOCIATION: none

SUBMITTED: 15Jul63

ENCL: 00

SUB CODE: EC

NO REF SOV: 005

OTHER: 002

Cord 2/2

L 34162-65 EWT(1)/EEG(k)-2/ENG(m)/T/EEG(b)-2/EMA(h) Pa-4/Pz-6/Feb LJP(c)  
 ACCESSION NR: AP5005148 S/0188/65/000/001/001-7/0054

AUTHOR: Gomonova, A. I.; Logginov, A. S.; Senatorov, K. Ya.

TITLE: Investigation of transients in a three-junction semiconductor diode in response to a large signal

SOURCE: Moscow. Universitet. Vestniki. Seriya 3. Fizika, astronomiya, no. 1, 1965, 47-54

TOPIC TAGS: three junction diode, transient response, minority carrier, base resistance, emitter junction, carrier lifetime

ABSTRACT: The response of a three-junction (p-n-p-n) semiconductor diode to a step-current input was investigated both theoretically and experimentally. The theoretical investigation of the switching process in such a device consisted of determining the distribution of the minority-carrier concentration and the configuration of the electric fields in the base of the three-junction diode during the time of the transient. From a determination of the time variation of the concentration, the authors were able to calculate the time variation of the voltages on the p-n junctions, and thus determine the contribution of the modulation of the base re-

Card 1/2

L 34162-65

ACCESSION NR: AP5005148

sistance and the variation of the voltage on the emitter p-n junction to the total transient on the three-junction diode. The theoretical calculation has shown that the voltage transient in a three-junction diode lasts 2.5 minority-carrier lifetimes (in the base region). It is assumed that the emitter junctions are 100% efficient, that the diode is one-dimensional with respect to current flow, that the effective lifetime of the minority carriers is constant. The density of the electric space charge in the base region is assumed to be equal to zero. The three-junction diode was also tested by passing square waves from a high-power square-wave generator, and the theoretical results were found to be in good agreement with experiment. Orig. art. has: 7 figures and 16 formulas.

ASSOCIATION: Kafedra fiziki kolebaniy, Moskovskogo gosudarstvennogo universiteta  
(Department of Oscillation Physics, Moscow State University)

SUBMITTED: 05Feb64

ENCL: 00

SUB CODE: EC

NR REF SOV: 002

OTHER: 001

Card 2/2

GOMONOVA, A.I.; LOGGINOV, A.S.; SENATOROV, K.Ya.

Study of transients in four-layer semiconductor devices in the  
case of strong signals. Vest. Mosk. un. Ser. 3: Fiz., astron.  
20 no.1:47-54 Ju-F '65. (MIRA 18:3)

1. Kafedra fiziki kolebaniy Moskovskogo universiteta.



ACC NR: AP7003319

SOURCE CODE: UR/0188/66/000/006/0110/0110

AUTHOR: Logginov, A. S.; Senatorov, K. Ya.; Knab, O. D.; Kurylev, V. V.; Magalyas, V. I.

ORG: none

TITLE: Investigation of emission spectra of semiconductor lasers

SOURCE: Moscow. Universitet. Vestnik. Seriya III. Fizika, astronomiya, no. 6, 1968, 110

TOPIC TAGS: semiconductor laser, laser emission, laser radiation spectrum, emission spectrum, *PN TRANSITION*

ABSTRACT: An experimental investigation was made of the relation between the spectral characteristics of the emission of semiconductor injection lasers and the spatial distribution of the luminescence along the p-n transition (near field). It is shown that the observed complex composition of the emission spectra of semiconductor lasers, which does not conform to the rule for the selection of modes in Fabry-Perot resonators, is due to the independent generation of the emission in separate luminous channels of the p-n transition. The emission of separate groups of modes in spectra and the emission of the luminous regions of the p-n transition are generally polarized linearly in the p-n transition plane or perpendicularly to it. When the number of luminous channels is increased and a growth in their emission intensity occurs when the current between them is increased, an optical interaction occurs. However, the

Card 1/2

UDC: none

SENATOROV, S.P.

Party organizations and problems of inventing and efficiency  
promotion. Izobr. v SSSR 3 no.2:31-33 F '58. (MIRA 11:3)

1. Sekretar' Minskogo gorodskogo komiteta Kommunisticheskoy partii  
Belorussii.

(Communist Party of the Soviet Union--Party work)  
(Efficiency, Industrial)

SENATOROV, T. S.

Fishing--Implements and Applicances.

Mechanical means for raising marine casting nets. Ryb. Khoz. 28 no. 7, 1952.

Monthly List of Russian Accessions. Library of Congress. November 1952. UNCLASSIFIED.

SENATOROV, V.A., inzh.

New method for installing binding coils on armatures. Blek.1  
tepl.tiaga 3 no.5:25-26 My '59. (MIRA 12:9)  
(Armatures) (Electric railway motors)

SENATOROV, V.A., inzh.

Investigating the performance of the wire armature bands of traction  
motors. Trudy TSNII MPS no.188 46-75 '60. (MIRA 14:2)  
(Electric railway motors)

SENATOROV, V.A., kand. ekhn nauk; ZAYCHIKOV, A.V., inzh.

State of the solder of traction motor collectors. Trudy TSNII  
MPS no.277:110-116 '64. (MIRA 17:6)

ZAYCHIKOV, A.V., inzh.; SENATOROV, V.A., kand. tekhn. nauk

Technological characteristics of soldering collectors on  
electric locomotive traction motors. Trudy TSNII MPS no.277:  
135-143 '64. (MIRA 17:6)

SENATOROV, YU. I., Engineer  
LANDER, E. P., Engineer  
ZEYDENBERG, V. K., Engineer  
ZIMAREV, A. N., Engineer

"Arithmetic Unit for Automatic Parallel Operation Computing Machine Employing Germanium Point Contact Instruments" a paper presented at the Conference on Methods of Development of Soviet Mathematical Machine-Building and Instrument-Building, 12-17 March 1956.

Translation No. 596, 8 Oct 56



ZEYDENBERG, V.K.; ZIMAREV, A.N.; LANDER, Ye.P.; SENATOROV, Yu.I.

[Parallel-type arithmetical system using semiconductor devices] Arifmeticheskoe ustroystvo parallel'nogo tipa na poluprovodnikovyykh priborakh. Moskva, In-t tochnoi mekhaniki i vychislitel'noi tekhn. Akad.nauk SSSR, 1957. 27 p. (MIRA 12:10)

(Transistor circuits) (Electronic calculating machines)

SENATOROVA, G.F.

Effect of antibiotics on leukocyte migration in the oral cavity.  
Antibiotiki 3 no.5:100-104 S-0 '58. (MIRA 12:11)

1. Gosspital'naya terapevticheskaya klinika (zav. - zasluzhennyy  
deyatel' nauki prof.M.A.Yasinovskiy) Odesskogo meditsinskogo  
instituta imeni N.I.Pirogova.

(PARAAMINOSALICYLIC ACID, eff.

on leukocyte migration in mouth (Rus))

(STREPTOMYCIN, eff.

same)

(LEUKOCYTES,

migration in mouth, eff. of PAS & streptomycin  
(Rus))

(MOUTH, eff. of drugs on,

PAS & streptomycin, on leukocyte migration (Rus))

SENATOROVA, G.F.

Itch in polycythemia vera. Vrach. delo no.4:423-425 Ap '59. (MIRA 12:7)

1. Fakul'tetskaya terapevticheskaya klinika (zav. - zasl.deyatel'  
nauki, prof. M. A. Yasinovskiy) Odesskogo meditsinskogo instituta.  
(ERYTHREMIA)

SENATOROVA, G. F., Cand Med Sci -- (diss) "Effect of penicillin, streptomycin, and PASK on the emigration of leucocytes." Odessa, 1960. 16 pp with graphs; (Odessa State Medical Inst im N. I. Pirogov); 300 copies; price not given; (KL, 17-60, 172)

SENATOROVA, G.F.

State of the oral cavity in patients with polycythemia vera during  
therapy with radioactive phosphorus. Khim.med. 38 no.5:41-48 My  
'60. (MIRA 13:12)  
(MOUTH) (ERYTHREMIA) (PHOSPHORUS--ISOTOPES)

S/196/61/000/009/018/052  
E194/E155

AUTHORS: Veselov, A.M., Polyakov, K.V., and Senatorova, I.V.

TITLE: A photo-relay for controlling artificial lighting

PERIODICAL: Referativnyy zhurnal, Elektrotekhnika i energetika,  
no.9, 1961, 18, abstract 9V 153. (Svetotekhnika,  
no.2, 1961, 27-28)

TEXT: The article describes a simple photo-relay circuit with the advantages of high sensitivity at low illumination levels (1 - 3 lux). The relay gives a single positive response when the illumination is increased or reduced. The device uses a bridge circuit with a polarising relay and is unaffected by variation of the current in the circuits. Experimental models of the photo-relay were installed to control street lighting in a housing area and on construction sites at the Kuybyshevgidrostroy. During six months service the photo relay was entirely satisfactory.

One figure.

[Abstractor's note: Complete translation.]

Card 1/1

VESELOV, A.M., inzhener; DUKHAN, B.S., inzhener; SENATOROVA, I.V., inzhener;  
KONOVALOV, V.A., tekhnik

Automatic disconnecting of welding apparatus in the absence of  
load. Prom. energ. 17 no.9:5-6 S '62. (MIRA 15:8)  
(Electric welding)

SENATOROVA, Valeriya Yakovlevna; NIKOLAYEV, V.I., red.

[Psychopharmacology] Psikhofarmakologiya. Moskva, Izd-vo "Znanie," 1965. 44 p. (Novoe v zhizni, nauke, tekhnike. VIII Seriya: Biologiya i meditsina, no.2)  
(MIRA 18:1)



KOZKO, A.I., inzh.; SENATOROVA, Ye.A., inzh.

Determination of the degree of acidity of coals. obog. i prik.  
ugl. no.8:18-27 '58. (MIRA 12:10)  
(Coal--Testing)

KOZKO, A.I., inzh.; SENATOROVA, Ye.A., inzh.

Method of determining Pechora coal types on an oxidized sample.  
Obog.i brik.ugl. no.11:24-27 '59. (MIRA 13:6)  
(Pechora Basin--Coal--Grading)

KOZKO, A.I., inzh.; MELIK-STEPANOVA, A.G., inzh.; YURGNKOV, N.I., inzh.;  
ZAITSEVA, Ye.I., inzh.; SENIFOROVA, Ye.A., inzh.

Investigating Novovolynskii deposit coals. Obog.i brik.ugl.  
no.12:17-29 '59. (MIRA 13:6)  
(Lvov-Volyn' Basin--Coal)

30

1ST AND 2ND ORDERS      PROCESSES AND PROPERTIES INDEX

*Can*

The swelling of Kok- and Tau-Sagyz rubbers in various solvents. A. M. Ignatev and L. G. Senatoreckaya. *Caoutchouc and Rubber* (U. S. S. R.) 1938, No. 12, 20-8.

—The rate and degree of swelling of 10 samples of various grades of Kok- and Tau-Sagyz rubbers in comparison with pale crepe and Na-biviny polymer in various solvents were detd. The greatest swelling occurred in the following solvents arranged in descending order:  $\text{CCl}_4 > \text{CHCl}_3 > \text{PhMe} > \text{C}_6\text{H}_6 > \text{ylene} > \text{petr. ether} > \text{Et}_2\text{O} > (\text{CH}_3\text{Cl})_2$ . Mol. wts. detd. by viscosity measurements in  $\text{C}_6\text{H}_6$  (Ostwald method) indicated the degree of polymerization. The degree of swelling was proportional to the degree of polymerization, and masticated rubber swelled less and was correspondingly less polymerized.

Bernard Kilberg

A S M S L A METALLURGICAL LITERATURE CLASSIFICATION

E-2

Senatorskaya, L. G.

<sup>15</sup>  
Rubber mixtures. P. I. Zakharchenko, A. V. Suslyakov,  
B. A. Dogadkin, and L. G. Senatorskaya, U.S.S.R. 102,  
662, Apr. 30, 1958. A preheated latex is continually fed into  
a tube together with an aq. dispersion of the necessary ad-  
ditives, such as C black, ZnO, S, and accelerators, and an  
electrolyte, and all the ingredients are mixed in a turbulent  
manner within the tube. The coagulation can also be car-  
ried out in containers equipped with a stirrer. The granular  
rubber mix is washed and dried. The plasticizers and resins  
added into the compn. can be used as emulsifiers of the  
aq. dispersions of the powd. chemicals. M. Haseb //

8  
2-May  
1-4E26(j)

SENATORSKAYA, L. G.

10m  
2maly

Strengthening of rubber in latex. R. A. Doroshin, L. G. Senatorskaya, V. I. Guseva, A. V. Sudzakov, and P. I. Zakharovich (Sci. Research Inst. Tire Ind., Moscow). Kolloid. Zhur. 18, 628-36 (1956). Strong vulcanizates (I) can be obtained from a latex of butadiene-styrene (II) emulsified with Na dibutylphthalenesulfonate, if 2 g. casein (III) together with 40 g. Channel Black (IV) (dispersed in a colloid mill); captax,  $(\text{HOOC}_2\text{H}_4)_2\text{N}$ ,  $\text{ZnO}$ , and S are added to 100 g. II. Gelatin and Na alginate have an effect similar to but less than that of III. Presumably III causes contact between II and IV by removing the protecting film from the latex globules; III induces aggregation between II and IV, and the aggregates have a higher rate of sedimentation than in the absence of III. The favorable effect of III can be

counteracted by a stabilizer (OP-10, a reaction product of ethylene oxide and alkylphenols is used) which prevents aggregation. The breaking stress of I increases with the fineness of IV and its amt. (0-60%); it is greater when vulcanization is carried out in a press than when the sample is in air; also the rate of reaction with S is greater in a press. The relative elongation, the residual elongation, and the max. swelling in xylene are greater after vulcanization in air. Coagulation of the latex with electrolytes results in stronger I than does drying; presumably, coagulation leaves some protective material behind. An increase in the concn. of IV raises the modulus of elasticity, ripping strength, and Shore hardness, and lowers relative elongation and rebound. At 40% IV, the highest breaking stress is 257 kg./

sq. cm. against 297 for I made in the usual way (not from a latex). J. J. Bikerman

10m  
my

SENATORSKAYA, I.G.

15  
Rubber and synthetic rubber. B. A. Doradkin, P. I. Zakharchenko, A. V. Muslakov, I. G. Senatorskaya, B. K. Karnul, and V. I. Guseva. U.S.S.R. 195,842, June 26, 1957. To a dispersion of an active filler, e.g., C black, in

latex are added substances such as casein, gelatin, or alginates which enhance stabilization and compn. of the components of the latex compn. M. Gross

PM 5/1

8  
4E20  
2 May

HOMIKOVSKI, P.M. [Khomikovsky, P.M.]; SENATORSKAIA, L.G. [Senatorskaya, L.G.]  
SEREBREAKOVA, Z.G. [Serebryakova, Z.G.]

Utilization of surface-active substances in the obtaining and  
processing of polymers. Analele chimie 15 no.2:50-64 Ap-Je '60.  
(EEAI 9:11)

(Polymers and polymerization)  
(Surface-active substances)  
(Emulsions)  
(Spot tests (Chemistry))



S/727/61/000/000/003/009  
1031/1242

AUTHORS: Dogadkin, B.A., Senatorskaya, L.G., Suslyakov, A.V.,  
Vasilyeva, S.A.

TITLE: Reinforcement of rubber in latex and properties of  
filler-loaded latex products

SOURCE: Sintez lateksov i ikh primeneniye. Ed. by A.V. Lebedev,  
A.B. Peyzner, and N.A. Fermor. Leningrad, Goskhimizdat,  
1961, 108-127

TEXT: A direct introduction of active fillers into a latex was known to produce a detrimental effect on the strength of the vulcanized end product. High strength properties may be achieved by: high dispersion of the fillers introduced into the mixture, by simultaneous precipitation of all components in the mixture, or by direct contact between rubber and filler particles. The authors succeeded in developing a butadiene-styrene latex CKC-3C (SKS-30) with the addition of carbon black and colloidal silica. The properties of the new compound after vulcanization matched those of a

Card 1/2

S/727/61/000/000/003/009  
I031/I242

## Reinforcement of rubber in latex...

product obtained from dry rubber. Addition of ammonium caseinate to a channel-black loaded latex increased the tensile strength of the compound from 20-50 kg/cm<sup>2</sup> up to 190 kg/cm<sup>2</sup>. Addition of casein to an unloaded latex failed to produce such effect. Concentrations of casein higher than 2-3 parts by weight produce a restabilization of the system, due to reaction between casein and the protective substance (nekal, ~~nekal~~). The channel-black filler strengthens the rubber in a butadiene-system latex. Carbon black and colloidal silica exert a similar effect of the strength of the compounds. Experiments were also carried out to develop a tire carcass-type rubber directly from carbon black-loaded latex. Plasticity and thermal stability of tested compounds were similar to those of conventional carcass rubber while tensile strength, resilience, and modulus of elongation fell short of the dry rubber properties. There are 11 figures and 8 tables.

ASSOCIATION: NIISHP

Card 2/2

28800

S/138/61/000/009/004/011  
A051/A129

15.9130

AUTHORS: Tarasova, Z. N., Eytingon, I. I., Senatorskaya, L. G., Fedorova, T. V.,  
Dogadkin, B. A.

TITLE: Application of phenothiazine (thiodiphenylamine) as an antifatigue  
agent of NR, CKM (SKI) and CKC-30AM (SKS-30AM) vulcanizates

PERIODICAL: Kauchuk i rezina, no. 9, 1961, 15 - 18

TEXT: A study was carried out to determine the action of phenothiazine during the vulcanization and fatigue of NR, SKI and SKS-30AM rubbers. It was established that phenothiazine has no significant effect on the kinetics of vulcanization and on the standard physico-mechanical properties of the vulcanizates. It increases the durability of the vulcanizates from the given rubbers during the process of repeated deformations under various conditions of fatigue. Phenothiazine or the products of its transformation combine with the vulcanizate under the effect of thermo-oxidizing action and repeated deformations. No combining of phenothiazine was noted during the process of thermal action alone. Phenothiazine in conjunction with certain oxidation inhibitors has more than just an additive action (mutually-intensifying action). A study of the exchange ability of the

Card 1/4

28800

S/138/61/000/009/004/011  
A051/A129

# Application of phenothiazine...

vulcanizates with elemental sulfur showed that phenothiazine does not affect the nature of the vulcanizing structures, and during vulcanization at 143°C causes noticeable changes in the type of the sulfur bonds at temperatures of 173°C. A further study of its ability to react in isotope exchange with elemental sulfur showed that under vulcanization at 173°C there is no noticeable sulfur exchange in phenothiazine. Data of Table 1 reveal that phenothiazine reduces the rate of chemical relaxation by 3 to 7 times in NR vulcanizates and by a factor of two in vulcanizates of SKI, and by 2 - 3 times in SKS-30A vulcanizates. It has a more effective action in rubbers produced at elevated vulcanizing temperatures than other known anti-fatigue agents, such as N-phenyl-N'-cyclohexyl-n-phenylenediamine (4010). Phenothiazine increases the durability of the vulcanizates during the process of repeated deformations in symmetrical sign-changing loading and in repeated bending. It reacts with the products of oxidation, stabilizing the latter and thus preventing the further development of the thermo-oxidizing destruction. The application of a system of inhibitors having a combined intensifying action shows promise in extending the service life of rubbers and stabilizing them. There are 2 tables, 1 set of graphs and 9 references: 6 Soviet-bloc and 3 non-Soviet-bloc. The references to the English-language publications read as follows:

Card 2/4

28800

S/138/61/000/009/004/011  
A051/A129

Application of phenothiazine...

Murphy, Ravner, Smith, Ind. Eng. Chem., 42, no. 2, 2479 (1950); A. Tobolsky, J. Appl. Phys., 27, no. 7, 673 (1956).

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti (Scientific Research Institute of the Tire Industry)

Table 1. Effect of the type of the anti-fatigue agent introduced into the mixture on the rate of chemical relaxation of tension and the durability of the vulcanizates during the fatigue process (dosage of anti-fatigue agent 1.0 w.p. to 100 w.p. of rubber)

| Type of rubber | Type of anti-fatigue agent | Vulcanization conditions |                | Rate of relaxation constant at 130°C, min · 10 <sup>-3</sup> |                          | Durability in deformations, 1,000 cycl. |                                  |
|----------------|----------------------------|--------------------------|----------------|--------------------------------------------------------------|--------------------------|-----------------------------------------|----------------------------------|
|                |                            | temp., °C                | duration, min. | in air                                                       | in non-oxygen conditions | symmetr. sign-exch. loading at 100°C    | repeated bending pinning at 20°C |
| NR             | without anti-fatigue agent | 143                      | 20             | 38.0                                                         | 1.11                     | 1,934                                   | -                                |
|                | phenothiazine              | 143                      | 20             | 11.5                                                         | 1.07                     | 3,217                                   | -                                |

Card 3/4

28200

S/138/61/000/009/004/011  
A051/A129

Application of phenothiazine...

Table 1. (continued)

|        |                                                                                                                                           |     |    |      |   |       |     |
|--------|-------------------------------------------------------------------------------------------------------------------------------------------|-----|----|------|---|-------|-----|
|        | N-phenyl-N'-cyclo-<br>hexyl-n-phenylene-<br>diamine (4010) . . .                                                                          | 143 | 20 | 7.4  | - | 5,489 | -   |
|        | without anti-fatigue<br>agent . . . . .                                                                                                   | 173 | 5  | -    | - | -     | 292 |
|        | phenothiazine . . .                                                                                                                       | 173 | 5  | 6.1  | - | -     | 600 |
|        | N-phenyl-N'-cyclo-<br>hexyl-n-phenylene-<br>diamine (4010) . . .                                                                          | 173 | 5  | 12.7 | - | -     | 405 |
| OKS-30 | without anti-fatigue<br>agent . . . . .                                                                                                   | 143 | 20 | 42.3 | - | 6,746 | -   |
|        | phenothiazine . . .                                                                                                                       | 143 | 20 | 13.8 | - | 8,390 | -   |
|        | N-phenyl-N'-cyclo-<br>hexyl-n-phenylene-<br>diamine (4010) . . .                                                                          | 143 | 20 | 19.9 | - | -     | -   |
| SKI-3  | without anti-fatigue<br>agent (rubber stabi-<br>lized with 0.5% neo-<br>zone D and 0.5% 1,4-<br>diphenyl-n-phenyl-<br>enediamine) . . . . | 138 | 40 | 20.5 | - | -     | 85  |
|        | phenothiazine . . .                                                                                                                       | 138 | 40 | 11.2 | - | -     | 145 |

Card 4/4

25887

S/069/61/023/004/002/003

B101/3215

15.9110

AUTHORS: Pechkovskaya, K. A., Senatorskaya, L. G., Berman, B. Z.,  
Dogadkin, B. A.

TITLE: Reinforcement of rubber in latex. 7. Electron microscopic  
examination of filled latex mixtures

PERIODICAL: Kolloidnyy zhurnal, v. 23, no. 4, 1961, 462-463

TEXT: This report was made at the tret'ye Vsesoyuznoye soveshchaniye po elektronnoy mikroskopii (Third All-Union Conference on Electron Microscopy), Leningrad, October 1960. The second communication of this series was published in Trudy II konferentsii po lateksu, Leningrad 1958. The authors based their report on a paper by B. A. Dogadkin et al. (Kolloidn. zh. 18, no. 5, 528, 1956) which shows that a reinforcing action of carbon black in latex can be attained by adding a destabilizing substance (casein) to latex. Here, this effect was studied under an 3M-100 (EM-100) electron microscope having a magnifying power of approximately 20,000. Collodion, quartz, or carbon replicas of the latex film, frozen in liquid nitrogen, were prepared. It was found that 1) all latex films containing neither

Card 1/2

25887

S/069/61/023/004/002/003

B101/B215

Reinforcement of...

carbon black nor casein had globular structures. 2) Addition of casein changed the structure. Part of the globuli disappeared, and a granular structure formed. Casein removes the protective covering of the globuli, thus allowing the latter to form a continuous polymer phase and to interact with carbon black. The contact area between polymer and carbon black is increased and, thus, causes reinforcement. 3) If the non-vulcanized, filled film was rolled, the last globuli disappeared. 4) Carbon black also had a destabilizing effect upon latex, although to a smaller extent than casein. Films with carbon black without casein contained less but larger globuli. 5) The number of globuli was reduced in the presence of carbon black and casein. [Abstracter's note: The electron microscopic pictures are irreproducible.] There are 1 figure and 2 Soviet-bloc references.

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti,  
Moskva (Scientific Research Institute of the Tire Industry,  
Moscow)

SUBMITTED: November 21, 1960

Card 2/2



L 12850-63

EPR/EWP(j)/EPF(o)/EWT(m)/BDS AFFTC/ASD Ps-4/Pr-4/Pc-4

RM/WW/JT

ACCESSION NR: AP3001163

S/0190/63/005/006/0892/0899

AUTHOR: Tarasova, Z. N.; Eyttington, I. I.; Senatorskaya, L. G.; Fedorova, T. V.; Snisarenko, A. M.; Andronova, G. I.; Dogadkin, B. A.

TITLE: Effect of thio-derivatives of amines and phenols in the process of thermomechanical treatment and fatigue of vulcanizates

SOURCE: Vy\*sokomolekulyarny\*ye soyedineniya, v. 5, no. 6, 1963, 892-899

TOPIC TAGS: vulcanizates, fatigue of vulcanizates, thermomechanical treatment, thio-derivatives of amines, thio-derivatives of phenols, rate of oxygen uptake, hydroperoxides, synergistic effect

ABSTRACT: Earlier publications by the authors demonstrated that thermomechanical stresses cause a breakdown and regrouping of the vulcanization network in vulcanizates, the ultimate shear modulus depending on the course of the regrouping processes. Since similar phenomena are taking place also in thermo-oxidative processes, where a key role belongs to the free radicals, it was logical to assume that the properties of vulcanizates would be influenced by substances capable of controlling the oxidations and the free radicals as well. To this end, thio-derivatives of amines and phenols were chosen, and their effect on the decomposition

Card 1/42

L 12850-63  
ACCESSION NR: AP3001163

7

of cumenehydroperoxide and on the kinetics of oxygen uptake by rubber studied, using the electron para-magnetic resonance technique. It was found that in the presence of 0.02 Mol of thioldiphenylamine per 1 Mol of peroxide it takes 90 minutes for its complete decomposition, as against 30 minutes with diphenylamine and 20 minutes without an inhibitor. The addition of 0.5 Millimol of the same amines to 100 gm rubber at 130C showed within one hour a barely noticeable oxygen uptake in the presence of thioldiphenylamine, as against 400 ml/gm for diphenylamine, while the control reached the latter figure within 30 minutes. The thio-derivatives of amines and phenols also showed a much more pronounced effect on the rate of chemical relaxation and a higher fatigue resistance of the vulcanizates as compared with the corresponding amines. An additional advantage of the thio-derivatives is their synergistic effect. It is concluded that the thio-derivatives of amines are more effective, as compared to the amines, in the preservation of the original vulcanization network in the processes of thermo-oxidative and thermomechanical influences. It is mentioned in footnotes that measurements by the electron paramagnetic resonance technique were obtained by Kashlinskaya, A. I. on an installation OKBA of the Goskhimkomitet, and that the spectrum was taken by Kavun, S. M. on a RE-1301 radio-spectrometer of the Scientific Research Institute of the Tire Industry. Orig. art. has: 1 formula, 7 charts, and 3 tables.

Card 2/42

*Scientific Research Inst. of the Tire Industry*

ALL INFO FROM (A)

SOURCE CODE: UR/0001/66/000/000/8094/8095

AUTHOR: Tarasova, Z. N.; Sonatorskaya, L. G.; Fedorova, T. V.; Eyttinger, I. I.; Kavun, S. M.; Bogadkin, B. K.

TITLE: Effect of the structure of vulcanizing network and rubber compositions on the effectiveness of anti-fatigue agents

SOURCE: Ref. zh. Khimiya, Part II, Abs. 88673

REF SOURCE: Sb. Sintez i issled. effektivn. stabilizatorov dlya polimern. materialov. Voronezh, 1964, 138-144

TOPIC TAGS: chemical stabilizer, thermomechanical property, synthetic rubber

ABSTRACT: p-Phenylenediamines, thiocamines, biphenols, thiophenols, phosphites and thiophosphites were studied as inhibitors (IN) of thermomechanical and thermal-oxidative degradation. The purity of the polymer has a strong influence on the stabilizing effect of IN. Additional introduction of IN into cured rubbers from raw rubbers treated with stabilizers causes a marked increase in stability only when they form a mutually reinforcing system with the stabilizers of the raw rubber. The composition and nature of the vulcanizing network substantially affect the stability of the cured rubbers and the manifestation of the action of IN. According to chemical relaxation data, the relative effectiveness of the action of IN increases with rising content of the accelerators in the mixtures. Increasing the stability of sulfur-free cured rub-

Card 1/2

Card 2/2

L 63797-65 EWT(m)/EPF(c)/EWP(j)  
ACCESSION NR: AP5018793

RM  
UR/0138/65/000/007/0005/0010  
678.063:541.68

AUTHOR: Tarasova, Z. N.; Senatorskaya, L. G.; Fedorova, T. V.; Eytingon, I. I.;  
Kirpichnikov, P. A.; Kavun, S. P.; Dogadkin, B. A.

TITLE: Effect of the structure of the vulcanizing network on the fatigue of rubber and  
study of methods of their stabilization

SOURCE: Kauchuk i rezina, no. 7, 1965, 5-10

TOPIC TAGS: stabilizer, antifatigue agent, antioxidant, vulcanizate fatigue, thermooxida-  
tion, zinc organic compound, synthetic rubber

ABSTRACT: The article reports on a study of the effect of zinc diisopropyl dithiophosphate,  
zinc diisopropyl dithiocarbamate and their combinations with derivatives of phenols and  
paraphenylenediamines on the stabilization of vulcanizates prepared from NK, SKI-3, SKD,  
and SKS-30 ARKM rubbers in the course of thermal and thermooxidative treatment in sta-  
tic tension and under repeated deformation. It was found that compounds containing  
branched alkyl groups in the molecule, particularly the diisopropyl group, have the great-  
est stabilizing effect against the thermomechanical and thermooxidative processes asso-  
ciated with the fatigue of vulcanizates. Zinc diisopropyl dithiophosphate is a weak vulcani-

Card 1/2

L 63797-65

ACCESSION NR: AP5018793

zation accelerator and produces vulcanizates with a lesser sulfide character of the cross links. It does not affect the induction period of the oxidation of rubber and vulcanizates by molecular oxygen, but speeds up the decomposition of cumene hydroperoxide in rubber solutions as a result of the oxidation of sulfur to the corresponding sulfoxides. In contrast to the antifatigue agents and antioxidants commonly used, which do not stabilize the processes of thermal degradation, zinc diisopropyl dithiophosphate has an inhibiting influence on the thermomechanical breakdown of the vulcanizing network. The use of oxidation inhibitors in conjunction with substances stabilizing the thermal cleavage of bonds is an effective means of combating the fatigue of rubbers containing polysulfide bonds at high temperatures. Orig. art. has: 5 figures and 4 tables.

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti (Scientific Research Institute of the Tire Industry)

SUBMITTED: 00

ENCL: 00

SUB CODE: MT, G-C

NO REF SOV: 007

OTHER: 004

Card 2/2

L 04977-67 EWT(m)/EWP(j) LJP(c) RM  
ACC NR: AP6030598 (A,N) SOURCE CODE: UR/0413/66/000/016/0091/0091

INVENTOR: Eytingon, I. I.; Tarasova, Z. N.; Vinogradova, T. N.;  
Senatorskaya, L. G.; Zhukova, I. I. 22  
B

ORG: none

TITLE: Stabilization of rubbers. Class 39, No. 185050

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 16,  
1966, 91

TOPIC TAGS: rubber stabilization, paraphenylenediamine derivative,  
*rubber, chemical stabilization*

ABSTRACT: An Author Certificate has been issued for a method of  
stabilizing rubbers by the addition of bis-(1-anilinomethyl-3-amino-  
methyl-2-naphtol)-N,N'-p-phenylenediamine [sic] to rubber mixtures.  
[B0]

SUB CODE: 11/ SUBM DATE: 17May65/

Card 1/1 *PLH*

UDC: 678.4.048.25

L 21326-66

ACC NR: AP5014678

SOURCE CODE: PO/0045/65/027/004/0557/0571

AUTHOR: Senatorski, Andrzej

ORG: Department of General Physics, Chair "B", Warsaw Technical University, Warsaw  
(Katedra fizyki ogólnej, "B", politechniki Warszawskiej)

TITLE: Spin waves in screw magnetized structure

SOURCE: Acta physica polonica, v. 27, no. 4, 1965, 557-571

TOPIC TAGS: magnetic property, magnetized structure, temperature dependence, spin wave, spin wave theory, ferromagnetic structure, magnetic moment, crystal lattice, magnetization

ABSTRACT: The temperature dependence of the magnetization for magnetic structures is calculated by means of the Holstein-Primakoff spin wave approach. The magnetic sample is considered to be composed of layers of magnetic nodes, the magnetic moments (all of the same magnitude) of each layer being arranged in ferromagnetic order and the magnetization of a single layer being a periodic function of the successive number of the layer. It is assumed that the magnetic nodes form a simple cubic lattice. It is pointed out that certain simplifying assumptions make diagonalization of the Hamiltonian feasible (the determinantal equation which has to be solved is of degree  $<4$ ). Thus, the magnetization, including the term independent of temperature, can be calculated. The structure (aa) "flexible" or (bb) "rigid", according to how

Card 1/2

L 21326-66

ACC NR: AP5014678

they react to changes in  $H$  and  $T$ , are considered. Possible forms of the temperature dependence of the magnetization, as allowed by spin wave theory, are briefly discussed. Orig. art. has: 47 formulas. [Based on author's abstract.] [NT]

SUB CODE: 20/ SUBM DATE: 04Jul64/ ORIG REF: 002/ OTH REF: 018/

Card 2/2



BRATUKHIN, A., kand.tekhn.nauk; SENATORSKIY, B., kand.tekhn.nauk;  
BORISENKO, I., kand.tekhn.nauk.

Possibilities of using pneumatic transportation in conditioning grain  
and milling products. Muk-elev.prom. 25 no.1:23-25 Ja '59.  
(MIRA 12:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut zerna i produktov  
yego pererabotki.

(Pneumatic-tube transportation)  
(Grain-handling machinery)

GALKIN, N.P.; SHUBIN, V.A.; SENATOV, A.D.; KRYLOV, A.S.

Removal of nitrogen oxides from tail gases of chemical industries.  
Khim. prom. no.6:424-426 Je '63. (MIRA 16:8)

(Gases--Purification) (Nitrogen oxides)

GALKIN, N.P.; SHUBIN, V.A.; KRYLOV, A.S.; SENATOV, A.D.

Thermodynamic analysis of the process of condensation of hydrogen fluoride from its mixture with water vapor, hydrogen, and carbon monoxide. Khim.prom. no.9:686-690 S '63. (MIRA 16:12)

GALKIN, N.P.; SHUBIN, V.A.; KRYLOV, A.S.; SENATOV, A.D.

Ammonium fluorides and the recovery of fluorine from waste  
gases. Khim. prom. no.10:752-754 O 1963. (MIRA 17:6)

SENATOV, G. V.

SOV/2628

25(5)

PHASE I BOOK EXPLOITATION

Kel'bert, Yakov Markovich, Mikhail Mikhaylovich Osminin, and Gavriil Vasil'yevich Senatov

Normirovaniye slesarno-sborochnykh rabot (Setting Up Standards for Machining and Assembling Operations) Leningrad, Sudpromgiz, 1958. 361 p. 2,600 copies printed.

General Ed.: S. G. Boborykin; Scientific Ed.: S. G. Boborykin; Ed.: N. S. Zheltoukhov; Tech. Ed.: L. I. Levochkina.

PURPOSE: This book is intended for standard setters, production engineers, and machine and assembly shop foremen and may be of use to employees of standard-studying bureaus.

COVERAGE: The book discusses the techniques of setting time standards for bench and bench and assembly operations and reviews individual and consolidated time standards employed in lot manufacture. Examples of calculating individual and consolidated time standards for bench and assembly operations are included together with tables for job acceptance standards. No personalities are mentioned. There are six references, all Soviet.

Card 1/3

Setting Up Standards for Machining (Cont.)

SOV/2628

TABLE OF CONTENTS:

|                                                                                                       |     |
|-------------------------------------------------------------------------------------------------------|-----|
| Foreword                                                                                              | 3   |
| I. Introduction                                                                                       | 5   |
| 1. Labor productivity and objectives of technical standard setting                                    | 5   |
| 2. Technically based time standard and its component elements                                         | 6   |
| 3. Organizational and technical conditions and the order of utilizing time standards                  | 10  |
| II. Technique of Developing Time Standards for Bench and Bench and Assembly Operations                | 16  |
| 4. General information                                                                                | 16  |
| 5. Familiarization with technical documentation and the development of a plan for the conduct of work | 17  |
| 6. Conduct of time measurements                                                                       | 24  |
| 7. Graphic analysis of time measurement results                                                       | 45  |
| III. Time Standard Tables                                                                             | 63  |
| 8. Bench work                                                                                         | 63  |
| 9. Bench and assembly operations                                                                      | 129 |
| 10. Control and measuring operations                                                                  | 169 |

Card 2/3

Setting Up Standards for Machining (Cont.)

SOV/2628

|                                                                                                                                                                  |     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| 11. Time standards for preliminary processing and final operations,<br>for organizational and technical servicing of a work place, for<br>rest and natural needs | 181 |
| IV. Bases for Calculating Time Standard Tables                                                                                                                   | 182 |
| 12. Basic empirical formulas                                                                                                                                     | 182 |
| Appendixes                                                                                                                                                       | 221 |
| Bibliography                                                                                                                                                     | 362 |

AVAILABLE: Library of Congress (TT205.K44)

Card 3/3

JG/lrb  
12-21-59

SENATOV, I.G., kandidat tekhnicheskikh nauk.

Calculations for radiators in hot-water heating systems. Biml.stroi.  
tekhn. 10 no.17:7-9 D '53. (MIRA 7:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sel'skokhozyaystvennoy  
i lesnoy aviatsii.  
(Hot-water heating) (Radiators)



SENATOV, I.G., kand. tekhn.nauk.

Radiators for medical, school, mercantile, and auxiliary buildings.  
Biul. stroi. tekhn. 12 no.7:13-15 JI '55. (MIRA 11:12)

1.Vsesoyuznyy nauchno-issledovatel'skiy institut sanitarno-tekhni-  
cheskogo oborudovaniya.  
(Radiators)

KARPIS, Ye.Ye., kandidat tekhnicheskikh nauk; POLIKARPOV, V.F., kandidat tekhnicheskikh nauk; ~~SENATOV, I.G., kandidat tekhnicheskikh nauk;~~  
SHEPELEV, I.A., kandidat tekhnicheskikh nauk; NOVIKOVA, F.M., redaktor; FEDOROVA, T.N., redaktor; LYUDKOVSKAYA, N.I., tekhnicheskiiy redaktor

[Equipment of a central heating and ventilating system] Oborudovanie dlia sistem tsentral'nogo otopeniia i ventiliatsii. Pod obshchei red. V.F.Polikarpova. Moskva, Gos. izd-vo lit-ry po stroit. materialam, 1956. 399 p. (MIRA 9:2)

(Ventilation)

(Heating from central stations)

*SENATOV, I.G.*

SENATOV, Igor' Grigor'yevich; BAULIN, V.A., red.; SABITOV, A., tekhn.red.

[Sanitary engineering in public catering enterprises] Sanitarnaya  
tekhnika v predpriyatiyakh obshchestvennogo pitaniya. Moskva,  
Gos. izd-vo tog. lit-ry. Sec. 3. [Cold and hot water supply,  
sewer system; a textbook] Snabzhenie kholodnoi i gorachei vodi,  
kanalizatsiya; uchebnoe posobie. 1957. 97 p. (MIRA 11:5)  
(Restaurants, lunchrooms, etc.--Sanitation)

SENATOV, Igor' Grigor'yevich; CHERVYAKOVA, L.S., redaktor; BALASHOV, V.I.,  
tekhnicheskii redaktor

[Sanitary engineering in public catering enterprises; a textbook]  
Sanitarnaya tekhnika v predpriyatiyakh obshchestvennogo pitaniya;  
uchebnoe posobie. Moskva, Gos.izd-vo torg.lit-ry, Sec.2.  
[Ventilation] Ventilatsiya. 1957. 111 p. (MLRA 10:9)  
(Restaurants, lunchrooms, etc.--Ventilation)

SENATOV, I., kand.tekhn.nauk

~~Air conditioning.~~ Obshchestv. pit. no.9:35-37 S '58. (MIRA 11:10)  
(Restaurants, lunchrooms, etc.--Air conditioning)

SENATOV, I.G., kand.tekhn.nauk

Experimental investigation of thermal and aerodynamic properties  
of heating sections in central conditioners. Sbor.trud.NIIST  
no.2:69-87 '59. (MIRA 13:4)  
(Air conditioning--Equipment and supplies)

SENATOV, I.G., kand.tekhn.nauk; MAYAKOVA, N.I., inzh.

Thermotechnical and aerodynamic characteristics of steam heating  
sections of central air conditioners. Sbox. turd. NIIST no. 6:223-  
234 '60. (MIRA 14:4)

(Air conditioning)

SENATOV, I.G., kand.tekhn.nauk; MAYAKOVA, N.I., inzh.

Regulative characteristics of paired air valves in central air  
conditioners. Sbox. turd. NIIST no. 6:235-255 '60. (MIRA 14:4)  
(Air conditioning) (Valves)



VYSHELESSKIY, A.N., prof.; CHUKAYEV, D.S., prof.; KOMAROV, N.S., prof.;  
SENATOV, I.G., dots.; RYABOV, V.I.; NEUCODOV, Ye.V.; GOROZHANKIN,  
—M.G.; GAN, M.B., dots., kand. tekhn. nauk, retsenzent; RAYSKIY,  
I.D., dots., retsenzent; LIKHAREVA, N.V., kand. tekhn. nauk, re-  
tsenzent; SHCHEGLOV, V.P., kand. tekhn. nauk, retsenzent;  
RUDOMETKIN, F.I., inzh., retsenzent; BAULIN, V.A., red.; EL'KINA,  
E.M., tekhn. red.

[Equipment of public food service establishments; electrical, re-  
frigerating, and sanitary equipment] Oborudovanie predpriatii ob-  
shchestvennogo pitaniia; elektricheskoe, kholodil'noe i sanitarno-  
tekhnicheskoe oborudovanie. Moskva, Gos.izd-vo torg. lit-ry,  
1961. 447 p. (MIRA 15:3)

(Restaurants, lunchrooms, etc.—Equipment and supplies)

SENATOV, Igor' Grigor'yevich, kand. tekhn. nauk; VAGANOVA, N.A.,  
red.; EL'KINA, E.M., tekhn. red.

[Sanitary engineering equipment for public eating establishments; heating, ventilation, hot and cold water supply, sewage] Sanitarno-tekhnicheskoe oborudovanie predpriatii obshchestvennogo pitaniia; otoplenie, ventiliatsiia, snabzhenie kholodnoi i goriachei vodi, kanalizatsiia. Moskva, Gos. izd-vo tog. lit-ry, 1963. 223 p. (MIRA 16:7)  
(Restaurants, lunchrooms, etc.—Equipment and supplies)  
(Sanitary engineering)

KARPIS, Ye.Ye., kand.tekhn.nauk; SENATOV, I.G., kand.tekhn.nauk; SHAKHNAROVICH,  
A.G., inzh.

Standardizing and unifying horizontal conditioners and intake  
ventilation chambers. Vod. i san.tekh.no.5:22-26 '64.  
(MIRA 17:9)

SMIRNOV, F.L., SENATSKAYA, G.S.

Genesis of the Urup pyrite deposit group in the Northern  
Caucasus. Vest. Mosk. un. Ser. biol, pochv., geol., geog. 14  
no.3:139-148 '59. (MIRA 13:6)

1. Kafedra mineralogii Moskovskogo universiteta.  
(Urup region--Pyrites)

KAPAVAYEVA, S.P.; SENATSKAYA, G.S.; SUVOROVSKAYA, N.A.

Determination of rhenium in various rhenium-containing  
products. Vest. AN Kazakh. SSR 21 no.1:51-56 Ja '65.  
(MIRA 18:7)

L-10816-65 EPA(s)-2/EWT(m)/EPF(c)/EPR/EWP(j)/T Pc-1/Pr-1/PS-1/Pt-10 RM/

WW

ACCESSION NR: AP4046903

S/0191/64/000/010/0062/0064

AUTHOR: Farberova, I. I.; Shleyfman, R. B.; Senatskaya, T. M.; Frenkel', M. D.; Kogan, A. M. (A)

TITLE: Effect of fillers on the physical and mechanical properties of polypropylene

SOURCE: Plasticheskiye massy\*, no. 10, 1964, 62-64

TOPIC TAGS: polypropylene, filler, polymer physical property, polymer mechanical property, gas black, titanium dioxide, talc, asbestos, fiber glass, thermal stability, hardness, tensile strength, impact strength

ABSTRACT: The dynamic properties of polypropylene compositions (ash content 0.2-0.8%) containing 0.6-0.7% FSF-24 stabilizer were investigated after the addition of varying amounts of powdered or fibrous fillers (gas black, titanium dioxide, talc, asbestos, and fiber glass). The experimental techniques for preparing the samples (pressure casting on a Ziegler machine for powdered fillers and direct pressing for fibrous fillers) and determining their strength and hardness are described. Tabulated data show that impact and tensile strength were decreased by the addition of asbestos. Addition of large amounts (40%) of powdered fillers also decreased the impact strength, strength, and hardness, but smaller amounts (5-10%) led to an improvement in the mechanical properties. Thus, the tensile strength

Card 1/3

L 10816-65

ACCESSION NR: AP4046903

3

increased to a maximum at 5%  $TiO_2$  or talc, and the relative elongation at break increased to a maximum at 5% gas black or talc and 10%  $TiO_2$ . The changes in abrasion resistance, which generally paralleled the changes in tensile strength, are shown in Fig. 1 of the Enclosure. The compressive strength, bending strength, and Brinell hardness, however, were generally decreased by 5-10% filler. The thermal stability (Vicat) of polypropylene was essentially unaffected by the addition of fillers, the required stress decreasing linearly with increasing temperature for all samples. "The authors express their gratitude to S. B. Ratner for his evaluation of the results and valuable advice. M. M. Turok and Ts. M. Matevosyan helped to prepare the samples." Orig. art. has: 4 figures, 2 tables, and 1 formula.

ASSOCIATION: none

SUBMITTED: 00

ATD PRESS: 3117

ENCL: 01

SUB CODE: OC, MT

NO REF BOV: 007

OTHER: 000

Card 2/3

L 10816-65

ACCESSION NR: AP4046903

ENCLOSURE: 01



Fig. 1. Relationship between the wear of a polypropylene composition and the filler content. Solid lines: abrasion in sheet form (left-hand ordinate); Dotted lines: abrasion in mesh form (right-hand ordinate). Filler: 1 - gas black; 2 -  $TiO_2$ ; 3 - talc. Ordinates: wear in  $mm^3/m \cdot cm^2$ ; abscissa: filler content in wt.%.

Card 3/3



MORGULIS, M.L.; SENATSKIY, N.N.

Utilizing waste products in the manufacture of goods made of  
aminoplastics and phenoplasts. Plast.massy no.7:46-49 '60. (MIRA 13:10)  
(Aminoplastics) (Phenol condensation products) (Plastics industry)

S/191/63/OCC/CO2/009/019  
B101/B186

AUTHOR: Senatskiy, N. N.

TITLE: Pasty compositions based on polyester resins

PERIODICAL: Plasticheskiye massy, no. 2, 1963, 26-31

TEXT: The article reports on attempts to produce pasty molding materials from polyester resins using crushed glass fiber 15-25 mm long and inorganic or organic fillers such as asbestos, chalk, kaolin, quartz powder, ПЭ-4 (PF-4) polyvinyl resin, or zinc stearate. ПН-1 (PN-1), ПН-2 (PN-2), or ПН-4 (PN-4) polyester resins were used as binders. 2% benzoyl peroxide or 0.7-0.8% cumene hydroperoxide was added as curing agent. In a 1.5-3 liter mixer, the dry components were first mixed; then the polyester resin, the curing agent and the pigment were added, and finally the glass fiber produced by disintegrating glass rove with a cutter. The mixing process took 40-47 min, the addition of glass fiber 5 min. The compositions were stored for 10-12 hrs in plastic bags for better homogenization, and then molded. The following data are given for the Martens heat resistance (HR, at 0°C) and the linear shrinkage (LS, %) of resins (R) and

Card 1/3

Pasty compositions based on ...

S/191/63/000/002/009/019  
B101/B186

compositions (C):

| HA         |         | LS      |         |
|------------|---------|---------|---------|
| R          | C       | R       | C       |
| PN-1 40-45 | 65-90   | 2.8-3   | 0.3-0.4 |
| PN-2 50-55 | 105-115 | 2.2-2.7 | 0.1-0.3 |
| PN-4 60-70 | 190-250 | 2.7-3   | 0.5-1.0 |

Molding was performed in hydraulic presses at 20-70 kg/cm<sup>2</sup>, the closing of the press took 6-7 sec, the viscous-flow state of the compositions lasted 30-10 sec at 170-190°C. The production comprised tanks for washing machines, storage-battery lids for "Volga" cars which withstood 50,000 kilometers running flanges for lathes, and other machine parts. Reinforcement of high-duty parts, such as edges and bottoms of tanks, with resin-impregnated glass rove or glass net has proved efficient. The products are stable against water, soda- and acid solutions up to 75-80°C. The molded products with glass fiber 20-25 mm long showed an impact strength of 15-20 kg/cm<sup>2</sup> and a bending strength of 700-1000 kg/cm<sup>2</sup>. Reinforcing with glass rove gave an impact strength of 450-470 kg/cm<sup>2</sup> and a bending strength of 3500-3700 kg/cm<sup>2</sup>. The dielectric constant was

Card 2/3

Pasty compositions based on ...

S/191/63/000/002/009/019  
B101/B186

4.2-5.2, the breakdown voltage 10.4-14.8 kv/mm. Molding tests of these compositions at 160-170°C were also made. There are 9 figures and 2 tables.

Card 3/3

GEKKER, I.R.; OVRUTSKIY, G.D., dotsent; SENATSKIY, Yu.V.

Possibility of treating hard dental tissues with laser  
irradiation. Vop. obshchei stom. 17:22-24 '64.

(MIRA 18:11)

1. Kafedra terapevticheskoy stomatologii Kazanskogo  
gosudarstvennogo meditsinskogo instituta i Fizicheskii  
institut imeni P.N. Lebedeva AN SSSR.

L 65003-65 EWA(k)/FBD/EWT(1)/EWP(e)/EWT(m)/EEC(k)-2/EWP(i)/T/EWP(k)/  
EWP(b)/EWA(m)-2/EWA(h) SCTB/IJP(c) WG/WH  
ACCESSION NR: AP5021725 UR/0386/65/002/002/0057/0058

AUTHOR: Basov, N. G.<sup>44</sup>; Zuyev, V. S.<sup>44</sup>; Senatskiy, Yu. V.<sup>44</sup>

TITLE: Neodymium glass laser with pulsed Q-switching

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu.  
Prilozheniye, v. 2, no. 2, 1965, 57-58

TOPIC TAGS: glass laser, neodymium laser, Q modulation, Q switching, electrooptic switching, air breakdown

ABSTRACT: An electrooptic switch was used for the Q-modulation of a neodymium-doped glass laser which consisted of two KGSS-7 neodymium glass rods (120 mm long, 10 mm in diameter) with parallel ends and a mirror with a 98% reflection coefficient at 1.06  $\mu$ . The electrooptic switch consisted of two crossed polarizing prisms and a Kerr cell controlled by a pulse with a 5 nanosec rise front and a 600 nanosec duration. The laser was pumped by 8-kj 600- $\mu$ sec pulses from two spiral lamps. Emission was in the form of a 2-j, 20 nanosec polarized pulse with a beam divergence not exceeding 15'. The pulse was beamed at an optical amplifier consisting of one rod 120 mm long and 12 mm in diameter. The emission energy at the amplifier output was 4 j, which when focused by means of lenses with  $f = 250$  and 400 mm, induced several

Card 1/2

L 65003-65

ACCESSION NR: AP5021725

"sparks" in the surrounding air. Passage of the laser beam through the amplifier rod caused local defects in the material. [YK]

ASSOCIATION: Fizicheskii institut im. P. N. Lebedeva Akademii nauk SSSR  
(Physics Institute, Academy of Sciences, SSSR) 44

SUBMITTED: 25May65

ENCL: 00

SUB CODE: EC

NO REF SOV: 002

OTHER: 000

ATD PRESS: 4079

Card

*has*  
2/2

L 58351-05 EWA(k)/FBD/ENG(r)/EWT(1)/ENP(e)/EWT(m)/EEC(k)-2/ENP(1)/EEC(t)/T/EEC(h)-2/  
ENP(k)/E P(L)/EWA(m)-2/EWA(h) Pm-4/Pn-4/Po-4/Pq-4/Pf-4/Peb/Pi-4/Pi-4 SCTB/LIP(c)  
ACCESSION NR: AP5016546 WG/WH OR/0056/65/048/006/1562/1564

AUTHOR: Basov, N. G.; Zuyev, V. S.; Senatskiy, Yu. V.

TITLE: Q-modulated neodymium glass laser

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 48, no. 6, 1965, 1562-1564

TOPIC TAGS: laser, glass laser, neodymium laser, Q spoiled laser, stimulated emission, giant pulse

ABSTRACT: A description is given of a Q-switched neodymium doped glass laser, the output of which is amplified by a system of three neodymium doped rods with a total output of 8 J. A prism rotating at a speed of 30,000 rpm was used in the initial laser system. The 12-cm-long glass rod with a 9-mm diameter contained about 6% of Nd<sub>2</sub>O<sub>3</sub>. The flash lamp input was 10 k J and the duration of the flash, 600  $\mu$ sec. The external mirror consisted of an uncoated plane-parallel glass plate. The laser output consisted of two pulses of approximately equal intensity and of 45 nanosec duration. The interval between pulses was between 260 and 450  $\mu$ sec and the total output was 1.5 J. The output of the first laser was fed into three neodymium glass rods with an overall length of 32 cm. The same flash lamps were used for excitation

Card 1/2



L 58351-65

ACCESSION NR: AP5016546

of the three rods. Normal generation in the 3-rod system was prevented by arranging the crystal faces at 30° angles to each other. The total output, consisting of two pulses, was 8 J. The duration of the pulses was between 25 and 43 nanosec. The beam divergence did not exceed 6°. A method for decreasing the duration of the pulses and for reducing the number of pulses to one is described. Orig. art. has: 3 figures. (CS)

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR  
(Physics Institute, Academy of Sciences, SSSR)

SUBMITTED: 28Dec64

ENCL: 00

SUB CODE: FCS

NO REF SQV: 003

OTHER: 002

ATD PRESS: 4042

Card 2/2

L 59527-65 EWA(k)/FBD/ENG(r)/EWT(l)/EEC(k)-2/EIF(n)-2/ENG(m)/EPA(w)-2/T/EEC(b)-2/  
 ENP(k)/EWA(m)-2/EWA(h) Fm-4/Pn-4/Pz-6/Pe-4/Pf-4/PeB/Pi-4/P1-4 SCTB/IJF(c) WG/WW/AT  
 ACCESSION NR: AP5016549 UR/0056/65/048/006/1583/1587 90  
 34

AUTHOR: Amabartsunyan, R. V.; Boyko, V. A.; Zuyev, V. S.; Basov, N. G.; Krokhin,  
 O. N.; Kryukov, P. G.; Seratskiy, Yu. V.; Stoylov, Yu. Yu.

TITLE: Heating of matter by focused laser radiation

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 48, no. 6, 1965,  
 1583-1587

TOPIC TAGS: high temperature plasma, laser application, laser radiation, lithium,  
 air

ABSTRACT: In discussing the main factors that limit the heating of matter to high temperatures by laser radiation, the authors point out that in solids the limitations are imposed by the sharp focus that obtains under most experimental conditions, and that in gases the limitation is imposed by the possibility of gas breakdown. In view of these limitations, they conclude, after analyzing the motion of the breakdown boundary in a gas qualitatively, that focusing of laser radiation on the surface of a condensed medium located in vacuum is the most promising method of obtaining a high temperature plasma. In this case the most convenient mode of

Card 1/2

L 59527-65

ACCESSION NR: AP5016549

operation is one in which one-dimensional motion of plasma occurs, since three-dimensional motion leads to rapid reduction in density and a decrease in the relative fraction of the laser radiation absorbed in the plasma. Under these conditions the maximum achievable temperature is determined by the energy loss due to radiation and thermal conductivity. The authors then report the results of a spectral analysis of the emission from a plasma produced by focusing the radiation from a neodymium glass Q-switched laser on the surface of a solid sample of lithium in vacuum. The laser radiation consisted of two pulses, each with energy approximately 3J and each approximately 40 nsec in length. The estimated obtained temperature in this case is of the order of 20 eV ( $2.3 \times 10^5$  deg). In the case of breakdown produced in air of normal density by a ruby laser pulse of approximately 3J the corresponding temperature cannot exceed 10.5 eV. Orig. art. has: 3 figures and 3 formulas. [02]

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Physics Institute, Academy of Sciences, SSSR)

SUBMITTED: 16Jan65

ERCL: 00

SUB CODE: EC, ME

NO REF SOV: 009

OTHER: 003

ATD PRESS: 4053

Card

AMBARTSUMYAN, R.V.; BASOV, N.G.; BOYKO, V.A.; ZUYEV, V.S.; KROKHIN, O.N.;  
KRYUKOV, P.G.; SENATSKIY, Yu.V.; STOYLOV, Yu.Yu.

Heating of a substance under focused radiation from a laser. Zhur.  
eksp. i teor. fiz. 48 no.6:1583-1586 Je '65.

(MIRA 18:7)

1. Fizicheskiy institut imeni P.N. Lebedeva AN SSSR.

L 44732-66 EWT(1)/EWP(e)/EWT(m)/EEG(k)-2/T/EWP(t)/ETI/EWP(k) IJP(c) WG/JD/JG  
 ACC NR: AP6031988 WH SOURCE CODE: UR/0386/66/004/005/0182/0185

AUTHOR: Zuyev, V. S.; Letokhov, V. S.; Senatskiy, Yu. V.

ORG: Physics Institute im. P. N. Lebedev, Academy of Sciences SSSR (Fizicheskiy institut Akademii nauk SSSR)

TITLE: Giant superluminescence pulses <sup>75</sup><sub>74</sub><sub>6</sub>

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 4, no. 5, 1966, 182-185

TOPIC TAGS: laser application, luminescence, neodymium glass, stimulated emission/KGSS-7 neodymium glass

ABSTRACT: The authors report a study of giant pulses of superluminescence of a strongly excited neodymium-glass medium with rapid switching of the gain. The reason for the use of giant pulses of incoherent light is that experiments with giant pulses of coherent and incoherent light can disclose the role of coherence and the role of optical power in the case of interaction of light with matter and the mechanism of damage to transparent materials by a strong light field. The tests were made with an active medium (Fig. 1) consisting of two identical neodymium-glass rods (KGSS-7) of 10 mm diameter, with matte lateral surfaces and with butt ends cut at the Brewster angle. The pump lamps illuminated 900 mm of the lateral surface of the rods. The gain in the two pumped rods was of the order of  $10^4$  per pass. The gain was instantaneously increased to  $10^8$  by uncovering the dense mirror with a Kerr shutter. The pulses radiated by the

Card 1/2

L 44732-66

ACC NR: AP6031988

Fig. 1. Diagram of setup for obtaining and recording giant superluminescence pulses. 1 - Dense mirror, 2 - Kerr shutter, 3 - neodymium-glass rods, 4 - filter, 5 - coaxial photocell.



medium at  $K \approx 10^8$  had an approximate energy 4 J and a duration at half-maximum 9 - 12 nsec. The start of the pulses lagged the time of gain switching  $t_1$  by 25 - 30 nsec. The medium was thus de-excited within less than three passes, the main energy being radiated within a time shorter than  $T_0$ . The power of the obtained superluminescence pulses reached 500 MW/cm<sup>2</sup>. Several intense flashes damaged the output end of the rod at the point A (Fig. 1). Thus, self-damage of neodymium glass is possible under the influence of intense incoherent radiation. The authors thank N. G. Basov for support and a discussion of the work. Orig. art. has: 2 figures and 1 formula.

SUB CODE: 20/ SUBM DATE: 17Jun66/ ORIG REF: 001/ OTH REF: 003

Card 2/2 mjs

SENECH, J.

Steam-jet refrigerating installations.

P. 488, (Strojirenstvi) Vol. 7, no. 7, July 1957, Praha, Czechoslovakia

SO: Monthly Index of East European Accessions (EEAI) Vol. 6, No. 11 November 1957

SENBORN, A.

and  
Senborn, B.

"Quality Of Banjut Wheat In Serbia." p. 37. (Arhiv Za Poljoprivredne Nauke, Vol. 5, no. 8, ~~xi~~  
1952, Beograd.)

East European Vol. 3, No. 2,  
SO: Monthly List of ~~Russian~~ Accessions, Library of Congress, February, 1954 ~~1953~~, Uncl.



Senborn, Adalbert

✓ Moisture determination in wheat and flour. Adalbert  
Senborn and Branka Senborn (Inst. Plant Breeding, Zemun-  
Polje, Yugoslavia). Zemljisla i Biljka 2, 109-27 (1963).  
Comparisons were made of moisture detns. in a Prilbender  
(I), a Shopper (II), and a Philips GM 4248 (III) app. and  
in an ordinary air-drying oven (IV). At 105°C, 5 hrs. is  
required for wheat and flour in IV and 12 hrs. for wheat and  
6 hrs. for flour in I; III gives unreliable results. At 130°C,  
feasible results can be obtained in 45 min. in I, II, and III;  
the error is still within permissible limits after heating wheat  
90 min. and flour 2 hrs. At 155°C, 15 min. is required for  
wheat and 10 min. for flour in IV; 20 min. is required for  
both wheat and flour in I, II, and III. The precision of  
I and IV is the same; that of II is lower but still practical.  
III gives higher values than IV, but they are within the limit  
of permissible error. Werner Jacobson

Senborn, Branka

✓ Moisture determination in wheat and flour. Adalbert  
Senborn and Branka Senborn (Inst. Plant Breeding, Beđin-  
Polje, Yugoslavia). *Zemljiste i Biljka* 2, 109-27 (1953). —  
Comparisons were made of moisture detns. in a Briffender  
(I), a Schopper (II), and a Philips GM 4248 (III) app. and  
in an ordinary air-drying oven (IV). At 105°, 5 hrs. is  
required for wheat and flour in IV and 12 hrs. for wheat and  
flour in I; III gives unreliable results. At 130°,  
reliable results can be obtained in 45 min. in I, II, and III;  
the error is still within permissible limits after heating wheat  
90 min. and flour 2 hrs. At 135°, 15 min. is required for  
wheat and 10 min. for flour in IV; 20 min. is required for  
both wheat and flour in I, II, and III. The precision of  
I and IV is the same; that of II is lower but still practical.  
III gives higher values than IV, but they are within the limit  
of permissible error. Werner Jacobson

SENEROTAS, Izidorius; STASKONIENE, F., red.

[Centralized control of technological processes] Cnetrali-  
zuota technologiniu procesu kontrole. Vilnius, Leidykla  
"Mintis," 1965. 95 p. [In Lithuanian] (MIRA 18:6)

SENCAR, Michal

Polnohospodarska statistik. (Agricultural statistics. a university  
textbook. bibl., tables) Bratislava, SPN, 1957. 235p.

Bibliograficky katalog, CSR, Slovenske knihy, Vol.VIII. 1957. No.9. p.282.

SENCEANU, V., ing.

Preventing dangers associated with the exploitation of  
refrigerating plants. Ind alim anim 11 no.6:178-181 Je '63.

1. Intreprinderea Industriala de Stat "Frigotehnica", Bucuresti.

SENCEK, F.

Multihole transfluxors. El tech cas 14 no.8:508-513 '63.

ZINOV'YEV, I., vtoroy pilot; PETUKHOV, A., vtoroy pilot; PORTYKO, G.,  
vtoroy pilot; BELYAKOV, P., vtoroy pilot; SENCHA, G., vtoroy  
pilot; SMIRNOV, L., vtoroy pilot; SERGEYEV, A., vtoroy pilot;  
KUZNETSOV, L., vtoroy pilot

When sealing becomes a problem.... Grazhd.av. 17 no.6:  
20-21 Je '60. (MIRA 13:7)

1. Dal'nevostochnoye upravleniye Grazhdanskogo vozdushnogo  
flota (for all except Sergeyev, Kuznetsov). 2. Severnoye uprav-  
leniye Grazhdanskogo vozdushnogo flota (for Sergeyev, Kuznetsov).  
(Aeronautics, Commercial---Freight)

SENCHA, I.Yu.

Communal type irrigated fields with alternating filtration beds  
on chernozem soils. Vod.i sah.tekh. no.9:22-23 D '55. (MLBA 9:3)  
(Irrigation)



SENCHA, I. Yu., inzh.

Installation for eliminating cyanides from industrial sewage.  
Gig. i san. 23 no.9:64-66 S '58 (MIRA 11:11)

1. Khar'kovskogo otdeleniya Gosudarstvennogo proyektnogo instituta  
po izyskaniyam i projektirovaniyu naruzhnykh vodoprovodov, kanalizatsii  
i gidrotekhnicheskikh sooruzheniy.

(WATER POLLUTION,

instillation for removal of cyanide contaminants (Rus))

(CYANIDES,

instillation for removal of cyanide contaminants  
from indust. waste waters (Rus))

SECHAKOVA, S.A.

Characteristics of the clinical course of rheumatic fever during the climacteric period and in elderly persons. Uch. zap. Stavr. gos. med. inst. 12:96-97 '63.

Characteristics of the clinical course of hypertension during the climacteric period and in elderly persons. Ibid.:98-99

Characteristics of the clinical course of coronary insufficiency during the climacteric period and in elderly persons, and its outcome. Ibid.:100-101 (MIRA 17:9)

1. Kabinet gerontologii (konsul'tant zasluzhennyi deyatel' nauki RSFSR prof. V.G. Budylin) i kafedra gosital'noy terapii (zav. prof. I.N. Sergiyenko) Stavropol'skogo gosudarstvennogo meditsinskogo instituta.

DINISCHIOTU, G.T.; CRACIUN, E.C.; SENCHEA, A.; DIMITRIU, Mihaela; GHEORGHITU, A.

Experimental studies of the local and general effects of SC-2  
administered through the respiratory tract. I. Lesions and histo-  
chemical reactions. Stud. cercet. med. intern. 3 no.2:249-264 '62.

(RESPIRATORY SYSTEM pharmacology)

(SULFUR toxicology) (BRONCHITIS experimental)

(RESPIRATORY TRACT INFECTIONS etiology)

MANU, P., Prof.; VELEA, St., dr.; SENCHEA, Al., dr.

Data concerning the risks of carbon monoxide poisoning of workers engaged in checking and grinding in of motors. Rev. igiena microb. epidem., Bucur. Vol. 4:55-62 Oct-Dec 55.

1. Catedra de igiena muncii si boli profesionale L. M. F. Bucuresti.

(CARBON MONOXIDE, poisoning  
risks in checking & grinding in of motors.

(POISONING  
carbon monoxide, risks in checking & grinding in of  
motors.